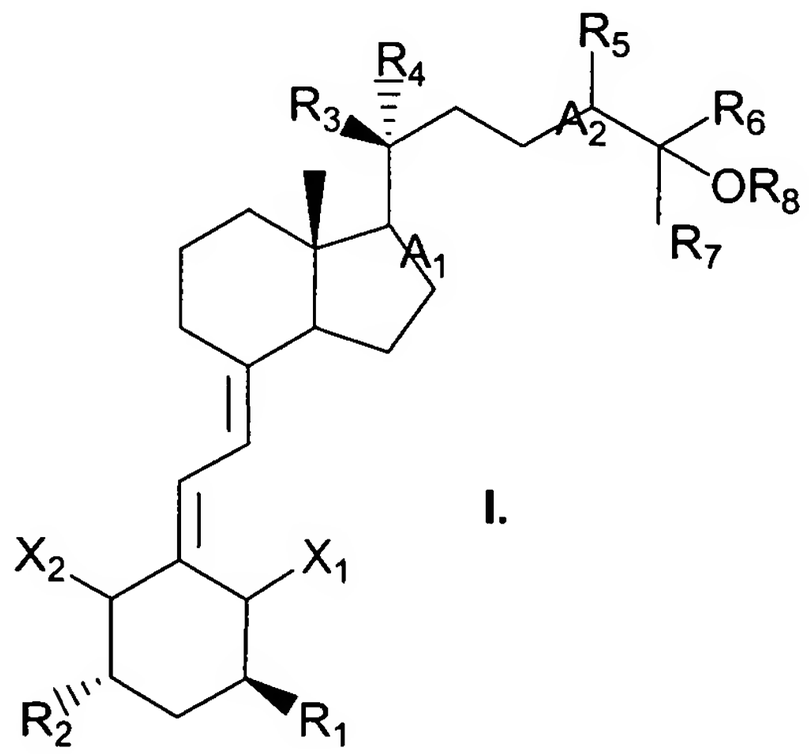
AMENDMENTS TO THE CLAIMS

Please amend claims 82, 85, 87, 90, 91, 93, 96, 99, 101, 103, 107, 110, 121, 125, 130, 133, 136, 138, 140, 149, 150, 151 and 156 and please cancel without prejudice or disclaimer claims 2 - 27, 29 - 44, 59 -72, 83, 84, 86, 88, 89, 92, 95, 97, 100, 102, 104 -106, 108 -109, 111 -115, 117 - 120, 122 -124, 126 -129, 131, 132, 135, 137, 139, 141 -148, 152 -155 and 157 -159 as follows.

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A vitamin D_3 compound of formula I:



I.

wherein:

A_1 is single or double bond;

A_2 is a single, double or triple bond;

X_1 and X_2 are each independently H_2 or $=CH_2$, provided X_1 and X_2 are not both $=CH_2$;

R_1 and R_2 are each independently $OC(O)C_1$-C_4 alkyl, OC(O)hydroxyalkyl, or OC(O)haloalkyl;

R_3, R_4 and R_5 are each independently hydrogen, C_1-C_4 alkyl, hydroxyalkyl, or haloalkyl, with the understanding that R_5 is absent when A_2 is a triple bond, or R_3 and R_4 taken together with C_{20} form C_3-C_6 cycloalkyl;

R_6 and R_7 are each independently alkyl or haloalkyl; and

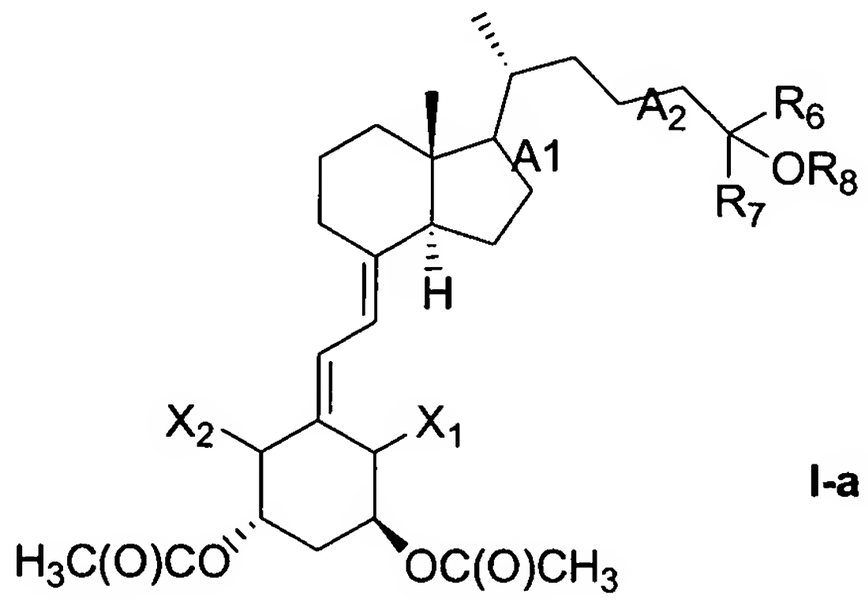
R_8 is H, $C(O)C_1$-C_4 alkyl, C(O)hydroxyalkyl, or C(O)haloalkyl;

provided that when A_1 is single bond, R_3 is hydrogen and R_4 is methyl, then A_2 is a double or triple bond; and

pharmaceutically acceptable esters, salts, and prodrugs thereof.

2 – 27 (Cancelled)

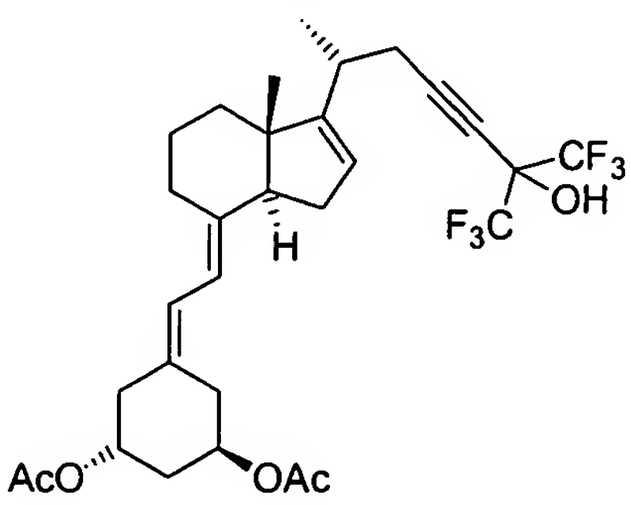
28. (Original) The compound of claim 1 having formula I-a



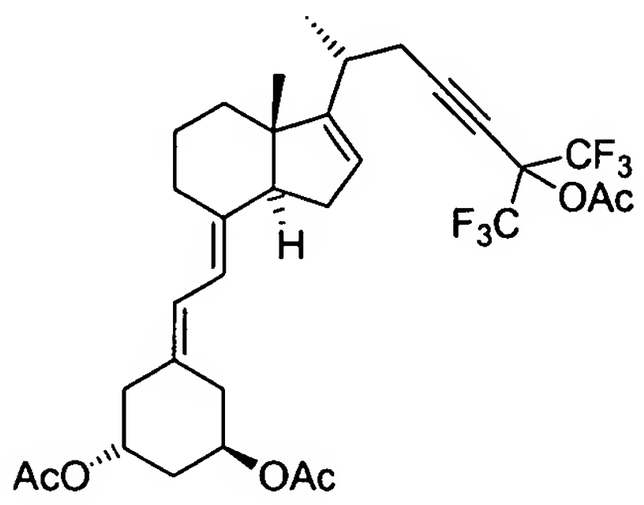
I-a

29 – 44 (Cancelled)

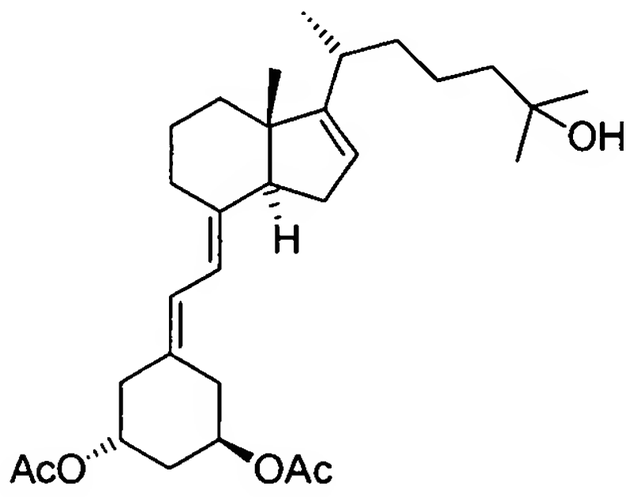
45. (Original) The compound of claim 28, wherein said compound is 1,3-Di-O-acetyl-1,25-Dihydroxy-16-ene-23-yne-26,27-hexafluoro-19-nor-cholecalciferol:



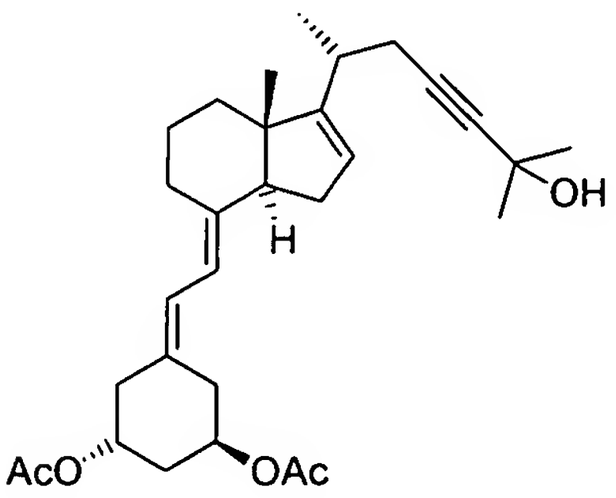
46. (Original) The compound of claim 28, wherein said compound is 1,3,25-Tri-O-acetyl-1,25-Dihydroxy-16-ene-23-yne-26,27-hexafluoro-19-nor-cholecalciferol:



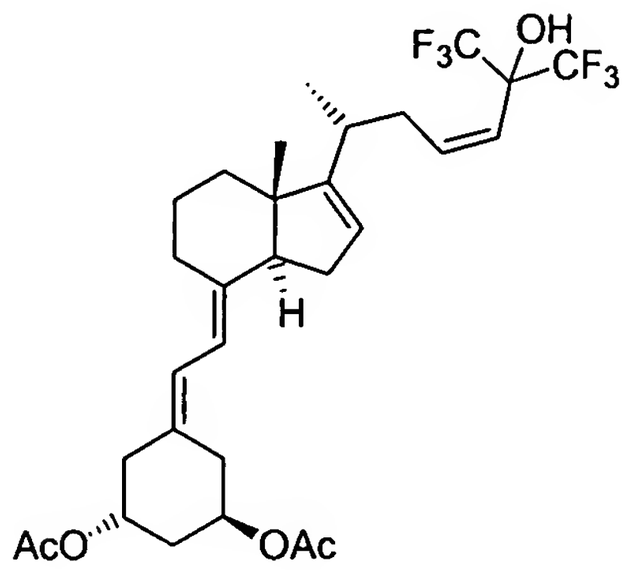
47. (Original) The compound of claim 28, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16-ene-19-nor-cholecalciferol:



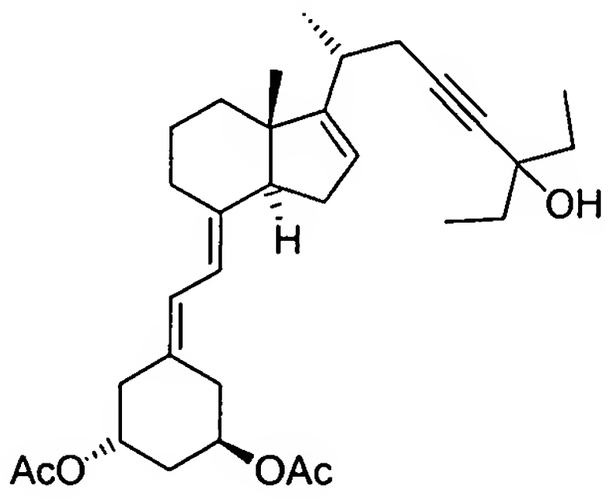
48. (Original) The compound of claim 28, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16-ene-23-yne-19-nor-cholecalciferol:



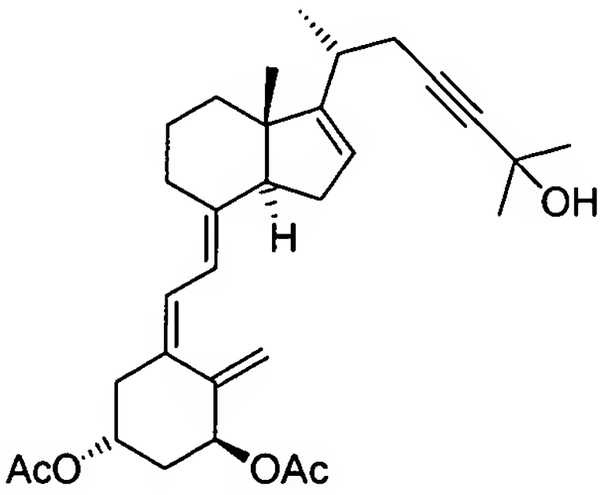
49. (Original) The compound of claim 28, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16,23Z-diene-26,27-hexafluoro-19-nor-cholecalciferol:



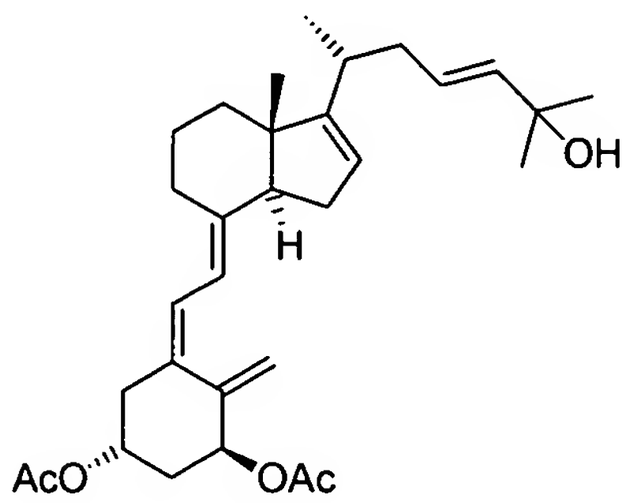
50. (Original) The compound of claim 28, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16-ene-23-yne-26,27-bishomo-19-nor-cholecalciferol:



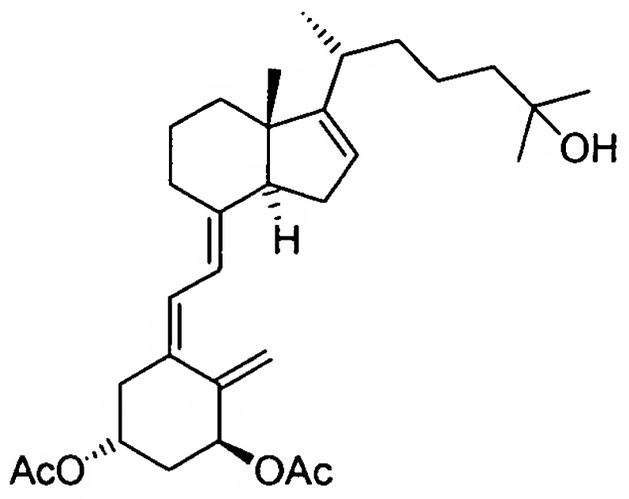
51. (Original) The compound of claim 28, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16-ene-23-yne-cholecalciferol:



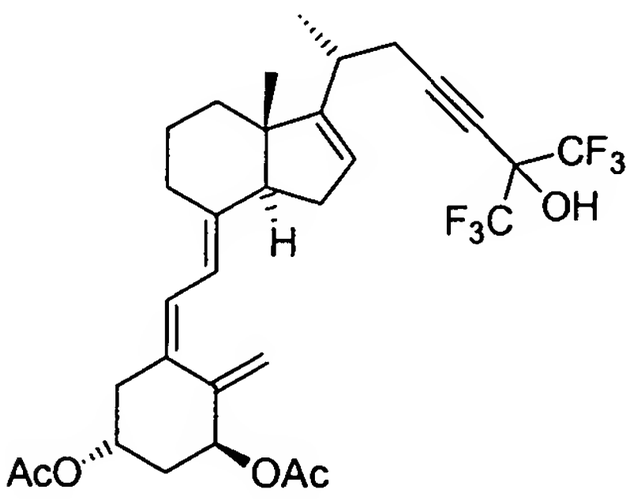
52. (Original) The compound of claim 28, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16,23E-diene-cholecalciferol:



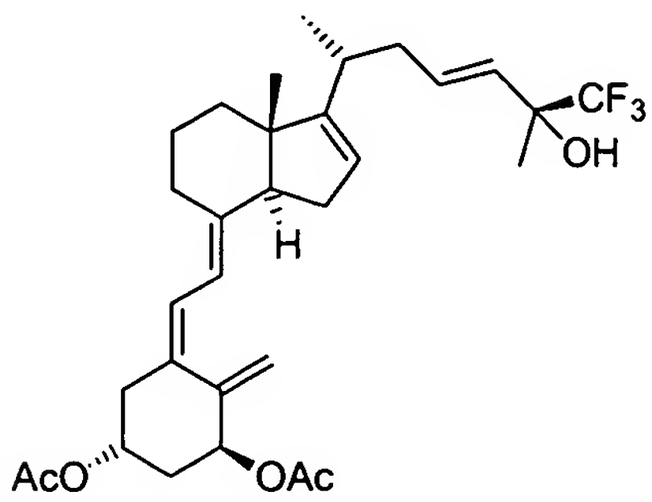
53. (Original) The compound of claim 28, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16-ene-cholecalciferol:



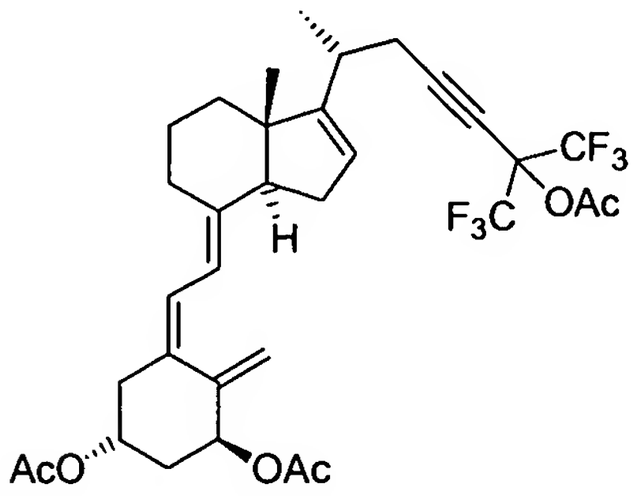
54. (Original) The compound of claim 28, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16-ene-23-yne-26,27-hexafluoro-cholecalciferol:



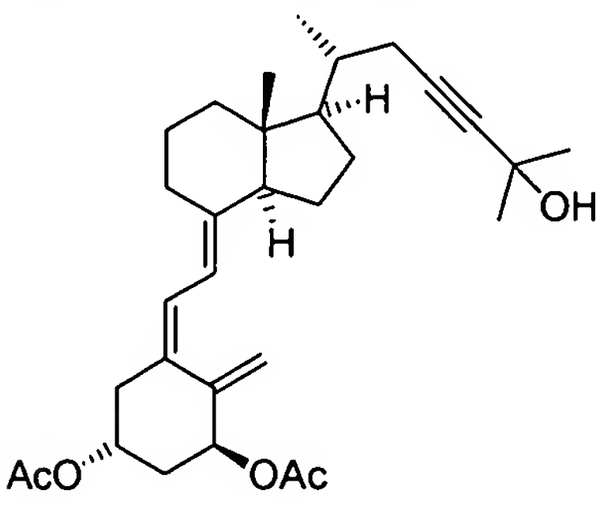
55. (Original) The compound of claim 1, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16,23E-diene-25R-26-trifluoro-cholecalciferol:



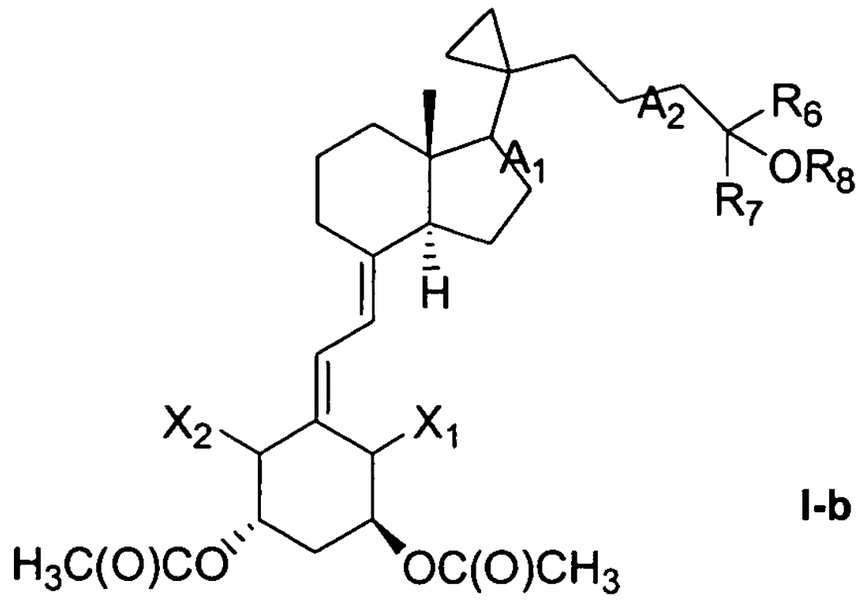
56. (Original) The compound of claim 28, wherein said compound is 1,3,25-Tri-O-acetyl-1,25-dihydroxy-16-ene-23-yne-26,27-hexafluoro-cholecalciferol:



57. (Original) The compound of claim 28, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-23-yne-cholecalciferol:



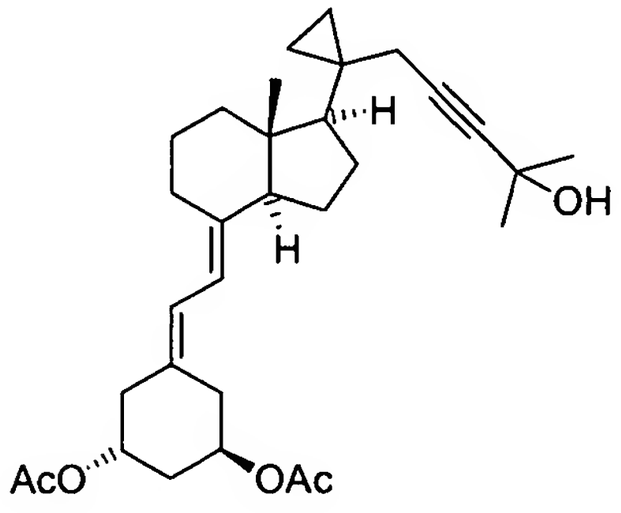
58. (Original) The compound of claim 1having formula I-b



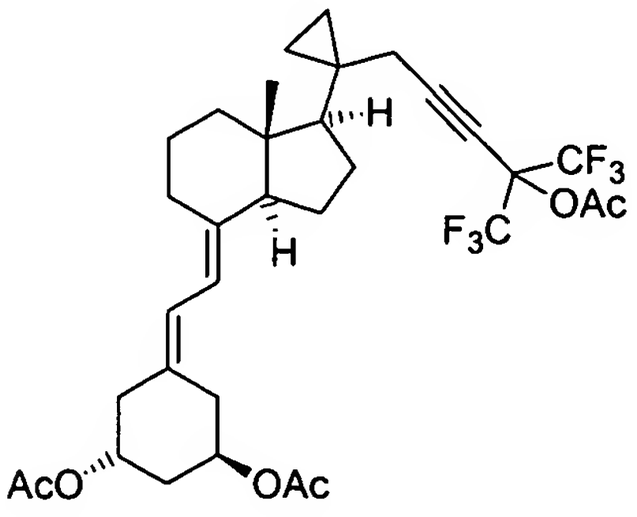
I-b

59 – 72 (Cancelled)

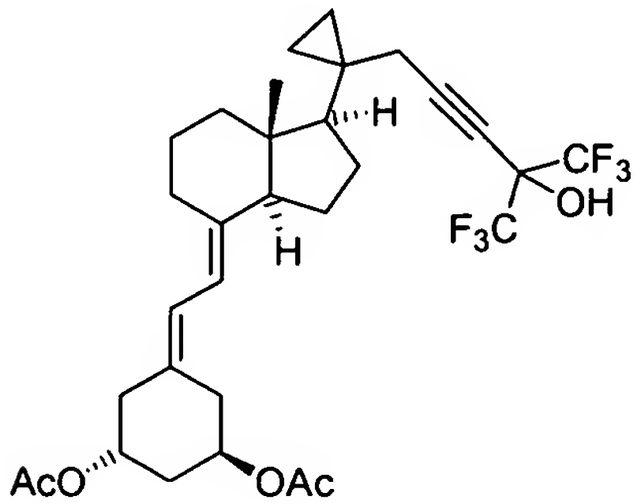
73. (Original) The compound of claim 58, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-20-cyclopropyl-23-yne-19-nor-cholecalciferol:



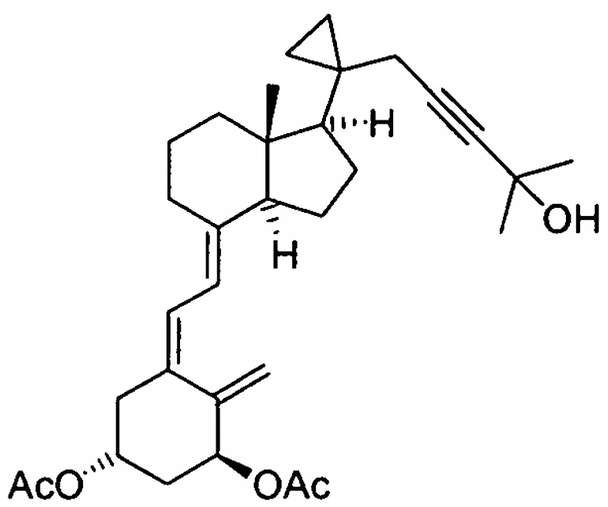
74. (Original) The compound of claim 58, wherein said compound is 1,3,25-Tri-O-acetyl-1,25-dihydroxy-20-cyclopropyl-23-yne-26,27-hexafluoro-19-nor-cholecalciferol:



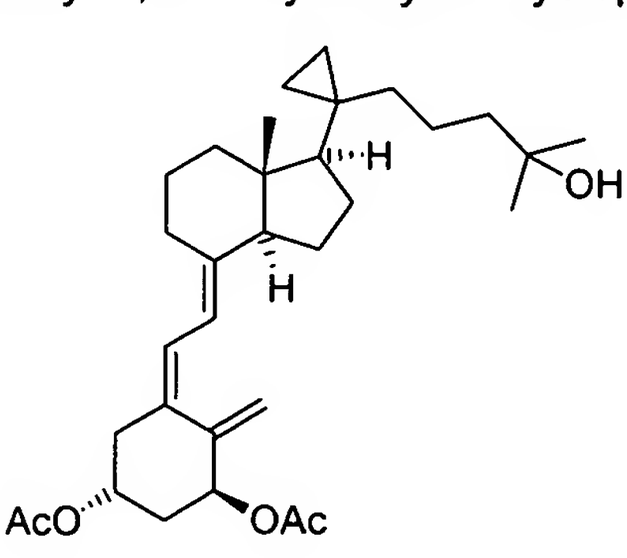
75. (Original) The compound of claim 58, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-20-cyclopropyl-23-yne-26,27-hexafluoro-19-nor-cholecalciferol:



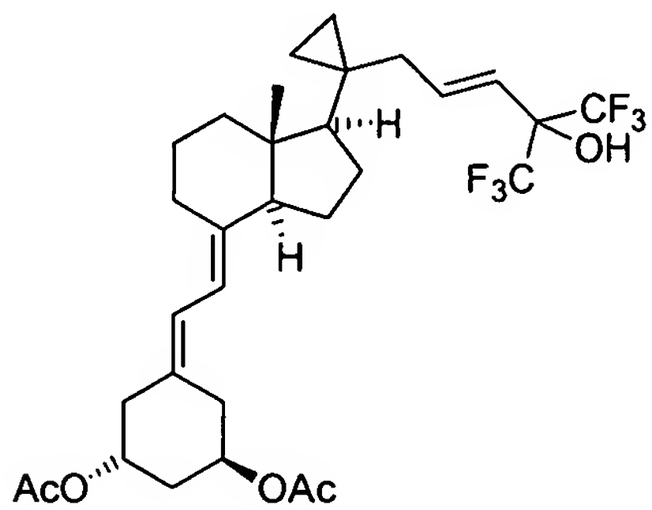
76. (Original) The compound of claim 58, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-20-cyclopropyl-23-yne-cholecalciferol:



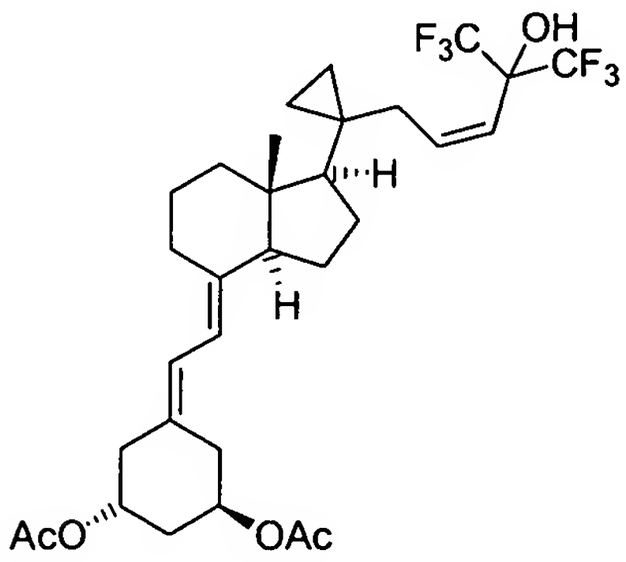
77. (Original) The compound of claim 58, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-20-cyclopropyl-cholecalciferol:



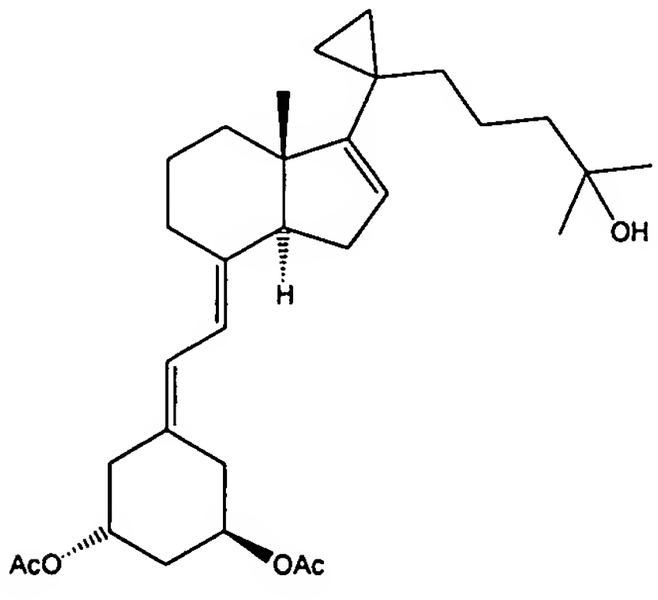
78. (Original) The compound of claim 58, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-20-cyclopropyl-23E-ene-26,27-hexafluoro-19-nor-cholecalciferol:



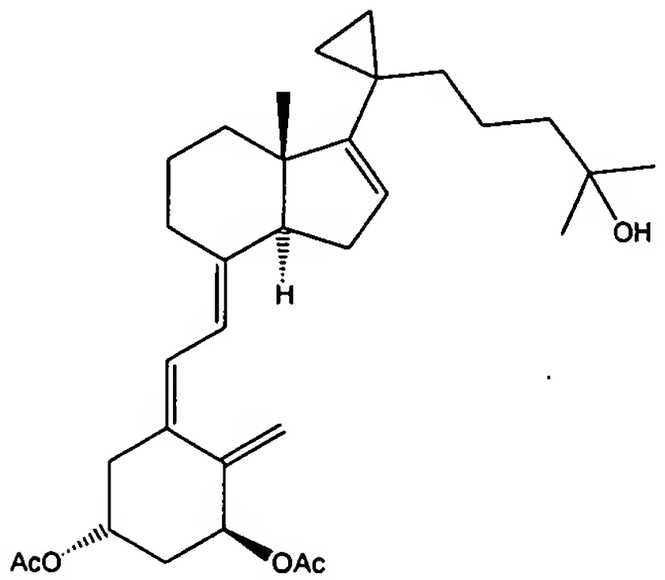
79. (Original) The compound of claim 58, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-20-cyclopropyl-23Z-ene-26,27-hexafluoro-19-nor-cholecalciferol:



80. (Original) The compound of claim 58, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16-ene-20-cyclopropyl-19-nor-cholecalciferol:



81. (Original) The compound of claim 58, wherein said compound is 1,3-Di-O-acetyl-1,25-dihydroxy-16-ene-20-cyclopropyl-cholecalciferol:



82. (Currently Amended) A method for treating a subject for a vitamin D_3 associated state, comprising administering to said subject in need thereof an effective amount of a vitamin D_3 compound of ~~any one of~~ claim[s] 1[-81], such that said subject is treated for said vitamin D_3 associated state, wherein said vitamin D_3 associated state is a disorder selected from the group consisting of an ILT3-associated disorder, an immune disorder, a disorder characterized by an aberrant activity of a vitamin D_3-responsive cell and a disorder characterized by an aberrant activity of a vitamin D_3-responsive smooth muscle cell.

83. (Cancelled)

84. (Cancelled)

85. (Currently Amended) The method of claim [84]82, wherein said immune disorder is an autoimmune disorder selected from the group consisting of type 1 insulin-dependent diabetes mellitus, adult respiratory distress syndrome, inflammatory bowel disease, dermatitis, meningitis, thrombotic thrombocytopenic purpura, Sjogren's syndrome, encephalitis, uveitis, uveoretinitis, leukocyte adhesion deficiency, rheumatoid arthritis, rheumatic fever, Reiter's syndrome, psoriatic arthritis, progressive systemic sclerosis, primary biliary cirrhosis, pemphigus, pemphigoid, necrotizing

vasculitis, myasthenia gravis, multiple sclerosis, lupus erythematosus, polymyositis, sarcoidosis, granulomatosis, vasculitis, pernicious anemia, CNS inflammatory disorder, antigen-antibody complex mediated diseases, autoimmune haemolytic anemia, Hashimoto's thyroiditis, Graves disease, habitual spontaneous abortions, Reynard's syndrome, glomerulonephritis, dermatomyositis, chronic active hepatitis, celiac disease, autoimmune complications of AIDS, atrophic gastritis, ankylosing spondylitis and Addison's disease.

86. (Cancelled)

87. (Currently Amended) The method of claim 8[4]2, wherein said immune disorder is transplant rejection.

88. (Cancelled)

89. (Cancelled)

90. (Currently Amended) The method of claim 8[9]2, wherein said disorder characterized by an aberrant activity of a vitamin D_3-responsive cell ~~comprises~~is a disorder selected from the group consisting of an aberrant activity of a hyperproliferative skin cell, an aberrant activity of an endocrine cell, an aberrant activity of a bone cell, cirrhosis, chronic renal disease, hypertension, neoplastic disease, neuronal loss and benign prostate hypertrophy.

91. (Currently Amended) The method of claim 90, wherein said ~~disorder~~aberrant activity of a hyperproliferative skin cell is selected from psoriasis, basal cell carcinoma and keratosis.

92. (Cancelled)

93. (Currently Amended) The method of claim 9[2]0, wherein said endocrine cell is a parathyroid cell and the aberrant activity is processing and/or secretion of parathyroid hormone.

94. (Original) The method of claim 93, wherein said disorder is secondary hyperparathyroidism.

95. (Cancelled)

96. (Currently Amended The method of claim 9[5]0, wherein said ~~disorder~~aberrant activity of a bone cell is selected from osteoporosis, osteodystrophy, senile osteoporosis, osteomalacia, rickets, osteitis fibrosa cystica, and renal osteodystrophy.

97. (Cancelled)

98. (Original) The method of claim 82, wherein said vitamin D_3 compound is administered in combination with a pharmaceutically acceptable carrier.

99. (Currently Amended) A method of ameliorating a deregulation of calcium and phosphate metabolism, comprising administering to a subject a therapeutically effective amount of a compound of ~~any one of~~ claim[s] 1 ~~to 81~~, so as to ameliorate the deregulation of the calcium and phosphate metabolism.

100. (Cancelled)

101. (Currently Amended) A method of modulating the expression of an immunoglobulin-like transcript 3 (ILT3) surface molecule in a cell, comprising contacting said cell with a compound of ~~any one of~~ claim[s] 1 ~~to 81~~in an amount effective to modulate the expression of an immunoglobulin-like transcript 3 (ILT3) surface molecule in said cell.

102. (Cancelled)

103. (Currently Amended) A method of treating an ILT3-associated disorder in a subject, comprising administering to said subject a compound of ~~any one of~~ claim[s] 1 ~~to 81~~in an amount effective to modulate the expression of an ILT3 surface molecule, thereby treating said ILT3-associated disorder in said subject.

104-106 (Cancelled)

107. (Currently Amended) A method of inducing immunological tolerance in a subject, comprising administering to said subject a compound of ~~any one of~~ claim[s] 1 ~~to 81~~in an amount effective to modulate the expression of an ILT3 surface molecule, thereby inducing immunological tolerance in said subject.

108-109 (Cancelled)

110. (Currently Amended) A method of inhibiting transplant rejection in a subject comprising administering to said subject a compound of ~~any one of~~ claim[s] 1 ~~to 81~~in an amount effective to modulate the expression of an ILT3 surface molecule, thereby inhibiting transplant rejection in said subject.

111-115 (Cancelled)

116. (Original) A method for modulating immunosuppressive activity by an antigen-presenting cell, comprising contacting an antigen-presenting cell with a compound of ~~any one of~~ claim[s] 1 ~~to 81~~in an amount effective to modulate ILT3 surface molecule expression, thereby modulating said immunosuppressive activity by said antigen-presenting cell.

117-120 (Cancelled)

121 (Currently Amended). The method of ~~any one of~~ claim[s] 82, ~~99, 101, 103, 107, or 110,~~ wherein said compound is administered orally, intravenously, topically or parenterally.

122-124 (Cancelled)

125. (Currently Amended) The method of ~~any one of~~ claim[s] 82, ~~99, 101, 103, 107, or 110,~~ wherein said compound is administered at a concentration of 0.001 µg – 100 µg/kg of body weight.

126 – 129 (Cancelled)

130. (Currently Amended) The method of claim [12]90, wherein the disorder is hypertension and the compound suppresses expression of renin, thereby treating the subject for hypertension.

131. (Cancelled)

132. (Cancelled)

133. (Currently Amended) The method of claim [132]90, wherein the neoplastic disease is selected from the group consisting of leukemia, lymphoma, melanoma, osteosarcoma, colon cancer, rectal cancer, prostate cancer, bladder cancer, and malignant tumors of the lung, breast, gastrointestinal tract, and genitourinary tract.

134. (Original) The method of claim 133, wherein the neoplastic disease is bladder cancer.

135. (Cancelled)

136. (Currently Amended) The method of claim [135]90, wherein the neuronal loss disorder is selected from the group consisting of Alzheimer's Disease, Pick's Disease, Parkinson's Disease, Vascular Disease, Huntington's Disease, and Age-Associated Memory Impairment.

137 (Cancelled)

138 (Currently Amended) The method of claim [137]82, wherein the disorder characterized by an aberrant activity of a vitamin D_3-responsive smooth muscle cell is hyperproliferative vascular disease selected from the group consisting of hypertension-induced vascular remodeling, vascular restenosis, arterial hypertension and atherosclerosis.

139 (Cancelled)

140. (Currently Amended) A method for preventing or treating bladder dysfunction in a subject in need thereof by administering an effective amount of a compound of ~~any of~~ claim[s] 1[-81] thereby to prevent or treat bladder dysfunction in said subject.

141- 148 (Cancelled)

149. (Currently Amended) The method of ~~any of~~ claim[s] 82[-147], wherein the subject is a mammal.

150. (Currently Amended) The method of ~~any of~~ claim[s] 82[-149], wherein the subject is human.

151. (Currently Amended) A pharmaceutical composition, comprising an effective amount of a compound of ~~any one of~~ claim[s] 1[-81] and a pharmaceutically acceptable diluent or carrier.

152 – 155 (Cancelled)

156 (Currently Amended) A packaged formulation for use in the treatment of a vitamin D_3 associated state, comprising a pharmaceutical composition comprising a compound of ~~any one of~~ claim[s] 1[-81] and instructions for use in the treatment of a vitamin D_3 associated state.

157 – 159 (Cancelled)